

What is claimed is:

1 1. A system for refreshing an informational database through log-
2 based transaction monitoring, comprising:
3 a production database comprising one or more tables each storing records
4 of production data generated by a transaction processing system;
5 a log writer periodically storing log entries into a log file with at least one
6 log entry generated for each transaction committed to the production database;
7 an informational database comprising one or more tables each storing
8 records of informational data for use by a decision support system; and
9 a log monitor dynamically analyzing the log entries stored into the log file
10 using a rule set that specifies a data selection criteria and storing updated records
11 generated from production data satisfying the data selection criteria into the
12 informational database.

1 2. A system according to Claim 1, further comprising:
2 the informational database further comprising metadata describing the
3 structure of the informational database; and
4 the log monitor converting the production data into the updated records
5 based on the metadata for the informational database.

1 3. A system according to Claim 2, further comprising:
2 a database builder generating the metadata and defining the rule set from
3 the data selection criteria structured as provided by the metadata.

1 4. A system according to Claim 3, wherein the metadata comprises at
2 least one parameter selected from the group comprising the production database
3 and the informational database architectures, network topology information, job
4 control information, and program code for performing the data selection.

1 5. A system according to Claim 1, further comprising:

2 the log monitor storing the updated records into the informational database
3 on a substantially continuous basis as a consistent data set of the production
4 database.

1 6. A system according to Claim 1, further comprising:
2 the log monitor creating replicas of at least one table of records selected
3 from the informational database.

1 7. A system according to Claim 1, further comprising:
2 the log monitor performing job control over each refreshment of the
3 informational database with the updated records.

1 8. A system according to Claim 1, further comprising:
2 a log monitor cache staging the updated records generated by the log
3 monitor as a transient data set shared with the informational database.

1 9. A method for refreshing an informational database through log-
2 based transaction monitoring, comprising:
3 maintaining a production database comprising one or more tables each
4 storing records of production data generated by a transaction processing system;
5 periodically storing log entries into a log file with at least one log entry
6 generated for each transaction committed to the production database;
7 maintaining an informational database comprising one or more tables each
8 storing records of informational data for use by a decision support system; and
9 dynamically analyzing the log entries stored into the log file using a rule
10 set that specifies a data selection criteria and storing updated records generated
11 from production data satisfying the data selection criteria into the informational
12 database.

1 10. A method according to Claim 9, further comprising:
2 storing metadata describing the structure of the informational database
3 into the informational database; and

4 converting the production data into the updated records based on the
5 metadata for the informational database.

1 11. A method according to Claim 10, further comprising:
2 generating the metadata and defining the rule set from the data selection
3 criteria structured as provided by the metadata.

1 12. A method according to Claim 11, wherein the metadata comprises
2 at least one parameter selected from the group comprising the production database
3 and the informational database architectures, network topology information, job
4 control information, and program code for performing the data selection.

1 13. A method according to Claim 9, further comprising:
2 storing the updated records into the informational database on a
3 substantially continuous basis as a consistent data set of the production database.

1 14. A method according to Claim 9, further comprising:
2 creating replicas of at least one table of records selected from the
3 informational database.

1 15. A method according to Claim 9, further comprising:
2 performing job control over each refreshment of the informational
3 database with the updated records.

1 16. A method according to Claim 9, further comprising:
2 staging the updated records generated by the log monitor as a transient
3 data set shared with the informational database.

1 17. A computer-readable storage medium holding code for performing
2 the method of Claim 9.

1 18. A system for maintaining large-grained database concurrency with
2 log monitoring means incorporating dynamically redefinable business logic,
3 comprising:

4 a source database engine executing operations expressed in a data
5 manipulation language against a source database with at least one operation
6 constituting a commit operation that completes each database transaction;

7 a database builder defining a current rule set with each rule comprising
8 business logic specifying a data selection criteria for records stored in the source
9 database;

10 means for periodically generating a log entry in a log for each transaction
11 committed to the source database, each log entry identifying an affected record
12 and including transactional data;

13 means for monitoring the log, comprising:

14 an evaluation module evaluating the transaction identified in each
15 log entry against the data selection criteria specified in the current rule set; and

16 a record generation module building a new record in accordance
17 with metadata describing a destination database and containing select
18 transactional data from the log entry of each transaction meeting the selection
19 criteria; and

20 a destination database engine storing the new record into the destination
21 database with the data stored in the destination database comprising at least a
22 partial subset of the source database.

1 19. A system according to Claim 18, further comprising:
2 the database builder dynamically redefining the current rule set comprise
3 business logic to specify a revised data selection criteria.

1 20. A system according to Claim 18, further comprising:
2 the destination database engine creating a new source database as
3 specified by the metadata.

1 21. A system according to Claim 18, further comprising:
2 a temporary data store caching each new record.

1 22. A system according to Claim 18, wherein the transaction data
2 comprises information selected from the group comprising a timestamp, table
3 identifier, record identifier, operation type, and undo information.

1 23. A method for maintaining large-grained database concurrency with
2 a log monitor incorporating dynamically redefinable business logic, comprising:
3 executing operations expressed in a data manipulation language against a
4 source database with at least one operation constituting a commit operation that
5 completes each database transaction;
6 defining a current rule set with each rule comprising business logic
7 specifying a data selection criteria for records stored in the source database;
8 periodically generating a log entry in a log for each transaction committed
9 to the source database, each log entry identifying an affected record and including
10 transactional data;
11 evaluating the transaction identified in each log entry against the data
12 selection criteria specified in the current rule set;
13 building a new record in accordance with metadata describing a
14 destination database and containing select transactional data from the log entry of
15 each transaction meeting the selection criteria; and
16 storing the new record into the destination database with the data stored in
17 the destination database comprising at least a partial subset of the source database.

1 24. A method according to Claim 23, further comprising:
2 dynamically redefining the current rule set comprise business logic to
3 specify a revised data selection criteria.

1 25. A method according to Claim 23, further comprising:
2 creating a new source database as specified by the metadata.

1 26. A method according to Claim 23, further comprising:
2 caching each new record in a temporary data store.

1 27. A method according to Claim 23, wherein the transaction data
2 comprises information selected from the group comprising a timestamp, table
3 identifier, record identifier, operation type, and undo information.

1 28. A computer-readable storage medium holding code for performing
2 the method of Claim 23.

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